

Claims

1. Process for the production of elements made from or comprising a material with a high heat storage capacity, in particular made from or comprising latent heat storing material - abbreviated in the following as PCM -, which are provided with a sheathing,
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- characterised in that
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- PCM is fed continuously or intermittently,
 - is enveloped in a tube and
 - the PCM-filled tube is subdivided into tube sections or is stored, for example coiled up.
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2. Process according to claim 1, characterised in that PCM is fed in liquid or granular form or as a strand in sections or in endless form.
3. Process according to claim 1 or 2, characterised in that the tube is extruded and that PCM is filled or introduced into the freshly extruded tube.
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4. Process according to claim 3, characterised in that the tube, after leaving the extruder nozzle and prior to entry into a cooling zone, is filled with PCM - preferably in liquid form.
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5. Process according to claims 1-4, characterised in that the PCM-filled tube made of plastics is constricted at predetermined locations in order to form tube sections and that the constrictions are heat sealed.
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6. Process according to claim 5, characterised in that the PCM-filled tube is passed through a press and that the constrictions and heat sealing are performed by heated pressing tools.

7. Process according to claim 6, characterised in that the tube is constricted and heat sealed at the predetermined locations one by one by reciprocating pressing tools.
- 5 8. Process according to claim 6, characterised in that the tube is transported between two counter-revolving endless belts equipped with pressure and heat sealing tools and constricted and heat sealed at the predetermined locations.
- 10 9. Process according to claim 6, characterised in that the tube is transported between two wheels equipped on the periphery with pressure and heat sealing tools and is constricted and heat sealed at the predetermined locations.
- 10 10. Process according to claim 5, characterised in that the PCM-filled tube sections are so severed at the narrow points that the ends of the tube sections remain sealed.
- 15 11. Process according to any one of claims 1-5, characterised in that a granular material consisting of PCM-filled pockets is manufactured from the strand of separated tube sections.
- 20 12. Process according to any one of claims 1-11, characterised in that PCM-filled tube sections individually or interconnected as a strand are affixed to a carrier, for example a plastics non-woven fabric or to a plastics foil, which is flexible or rigid.
- 25 13. Process according to claim 8, characterised in that the tube sections are arranged parallel side-by-side on the non-woven fabric or on the foil.
14. Process according to claim 8 or 9, characterised in that the PCM-filled tube sections are arranged and fixed between a non-woven fabric and a film.

15. Process according to claim 14, characterised in that an endless non-woven fabric and an endless strand of PCM-filled tube sections are brought together in the nip of a roller pair and are interconnected there as well as coated with the film from an extruder nozzle on the side facing away from the non-woven fabric.
- 5 16. Process according to claim 10, characterised in that the film is in each case drawn over the tube sections up to the non-woven fabric and fixed on the non-woven fabric between adjacent tube sections.
- 10 17. Process according to claim 14 or 16, characterised in that a non-woven fabric brings together tube sections individually fed from a hopper in the nip of a roller pair and that the tube sections are coated there with the film from an extruder nozzle and fixed between the tube sections by adhesively bonding the film to the non-woven fabric.
- 15 18. Element consisting of or comprising a material having a high heat storage capacity, in particular consisting of or comprising a latent heat storing material - denoted in the following as PCM -, manufactured, in particular, according to the process according to one or more of claims 1-17, characterised in that the PCM in the element
- 20 is provided with a tear-resistant, impervious and diffusion-proof sheathing, e.g. with a tube made of plastics and that the element is designed as a strand to be subdivided into sections as a finished or semi-finished product, in particular for construction purposes.
- 25 19. Element according to claim 18, characterised in that the PCM-filled tube is constricted and heat sealed at predetermined intervals in order to form tube sections, forming individually separated and sealed elements or a coherent strand.
- 30 20. Element according to claim 19, characterised in that the tube sections form a granular material consisting of PCM-filled pockets.

21. Element according to any one of claims 18-20, characterised in that PCM-filled tube sections individually or forming a continuous strand are affixed to a carrier, for example a non-woven fabric of plastics or to a plastics foil which is flexible or rigid.
- 5 22. Element according to any one of claims 18-21, characterised in that the phase change temperature of the PCM is adapted to the intended use, being preferably in the range of 15 - 40°C, in particular in the range of 20 - 35°C.
- 10 23. Element according to any one of claims 18-22, characterised in that the sheathing is flexible, in particular, balloon-like or tubular and permits shape variations of the elements consisting of PCM in a pulverised, granular, liquid or paste-like state.
24. Element according to any one of claims 18-23, characterised in that the sheathing is multi-layered.
- 15 25. Element according to any one of claims 18-24, characterised in that the PCM possesses the highest possible latent heat of at least 50KJ/kg.
- 20 26. Element according to any one of claims 18-25, characterised in that the PCM consists of a paraffin mixture such as eicosane, nonadecane or oktadecane.
27. Element according to any one of claims 18-25, characterised in that the PCM consists of a salt, salt hydrate, e.g. of calcium chloride hexahydrate or lithium nitrate-trihydrate.

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